1. The conditions for an ideal gas are low ______ and high ______. (fill in the blanks.) For a problem like this, “showing your work” could mean writing down where you got your answer from in the book, or a quick explanation why these are the assumptions.

2. A piston allows a gas to expand from $V_0$ to double its initial volume. The initial pressure is $P_0$, the final pressure is $0.40P_0$, and the initial temperature is $67^\circ C$.
   (a) Draw the initial and final points on a $pV$ diagram.
   (b) What is the final temperature of the gas?
   (c) Suppose that this process is irreversible. What does that tell you about how to connect points $i$ and $f$ on your $pV$ diagram?

3. Identify the following quasi-static processes. One-word answers for each is okay. (no explanation needed)
   (a) A hyperbola on a $pV$ diagram is called a(n) ______ process.
   (b) A horizontal line on a $pV$ diagram is called a(n) ______ process.
   (c) A vertical line on a $pV$ diagram is called a(n) ______ process.

[not due; for extra practice]. All problems from Chapter 18 of the 4th edition of Knight:

   Conceptual Questions: 5-6, 9-12.

   Exercises: 21, 26, 27-40. (I love problems like 27-40... you’re very likely to see this on quiz 2.)